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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER



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THE HEARTH AS AN ARCHAEOLOGICAL FEATURE
IN NEW ZEALAND

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Abstract

The subject of hearths, both stone-edged and stone-free, rectangular and circular, is considered in the context of archaeological interpretation and assumption. A review of the spatial and temporal distribution of stone-edged hearth forms reveals that these features may prove to be valuable markers of regional traditions.

Any discussion of the hearth in New Zealand pre-history must be preceded by an examination of terminology. The term 'hearth' as used among English speaking peoples means the floor of a fireplace. There is no implication as to the function of the fire itself, whether it is for cooking food or for warming the occupants of the house, although today the open fireplace is seldom used for cooking. The application of the term 'hearth' to archaeological features in New Zealand does, however, carry the connotation of 'fireplace within a house, used for keeping the occupants warm.' It is regarded as entirely distinct from the oven (*umu* or *haangi*) used for cooking. This polarization has undoubtedly been reinforced by the European interpretation of the Maori prohibition against eating or cooking food within particular types of *whare*. As a result, archaeologists expect to find features within a house corresponding to the hearth, and features outside it (often associated with cooking debris) which are interpreted as ovens. Conversely, they may assume that if they find a hearth, especially the rectangular stone-edged form, they are excavating a house floor, if an oven is found then it is believed they are working outside any house that might be present. Many archaeological reports exemplify these beliefs.

The significance of the stone-edged fireplace was recognised in Otago as early as the 1880s. M. G. Thomson's reminiscences of curio-hunting at Murdering Beach include the following comment:

"The digger's great ambition was to strike a fireplace. He knew, then, that he was in the centre of a *whare* and that he should work outwards to the walls where the Maori in most instances kept his valuables."

(Thomson, 1944 : 50)

The presence of stone-edged hearths is usually the substance of identifications of 'hut-sites' made by many workers. It is assumed that the habitation or 'hut' area at Wairau Bar was characterised by 'hut fire-places,' although only one is marked on the site plan (Duff, 1956 : 25-27). The presence of post butts, flaking floors and quantities of artefacts also contributed to the impression of a habitation area (*ibid* : 25-27, 66). Best remarked of the Ohaeawai pa sites of North Auckland that

"On the terraces of the old forts of these parts the observer often notes the fireplaces (*takuahi*) that formerly were used in all dwelling huts."

(Best, 1927 : 183)

Teviotdale located numerous 'hut' sites at Shag River, Otago. The type of excavation he employed was not likely to reveal post-hole patterns; so again, the interpretation appears to depend on the presence of fireplaces, of which 35 are marked schematically on his sketch plan (Teviotdale, 1924 : 3-10). The fireplace was not, however, his sole criterion for a hut. At Waitaki Mouth, Otago, he noted

"Although hut-sites were plainly visible on the Waitaki site, I found no heaps of ashes where fires had been, and saw no fireplaces in situ. Several of the hut-sites had large stones lying on them, but the fireplaces had been destroyed by curio-hunters."

(Teviotdale, 1939 : 171)

In this case the criterion seems to have been the presence of a circular hollow. Griffiths, on the other hand, identified circular 'hut sites' at Normanby, near Timaru, by large circles of fire-ash (Griffiths, 1941 : 215).

It is reasonably certain that New Zealand archaeologists regard the stone-edged rectangular hearth as diagnostic of the presence of a house. On many occasions this is reinforced by the finding of a pattern of post butts. For some early workers, for example Teviotdale,

locating the butts was not necessary to prove that a house was present; a fireplace by itself was proof enough.

Where the stone-edged fireplace is not found, hut sites have been recognised by circular or rectangular depressions (Teviotdale, 1939; Phillipps, 1952), the presence of circles of ash (Griffiths, 1941), post butts (Bellwood, 1971), alignments of stones (A. Taylor, 1963), or embankments of earth (A. Taylor, 1968). In particular cases some of these criteria have been questioned, for example Bellwood's (1968) critique of Taylor's 'round houses'. Certainly, circular or rectangular depressions are often the surface appearance of storage pits; circular areas of ash are ubiquitous features in all sites; post butts may sometimes represent drying racks; stone alignments are commonly garden boundaries; and earth embankments may be the remains of European potato-clamps.

There are two aspects to the question of the diagnosticity of the stone-edged hearth: was this feature invariably located within the house? Did all houses have a stone-edged hearth? The second issue was at first largely avoided. L. M. Groube wrote in 1965:

"Obviously the stone-walled fireplace emerges from this study as an important type fossil of the Classic Maori. Wherever it is found it should be immediately diagnostic of a 'house-site,' although not necessarily, as the evidence from WairauBar shows, of the Classic Maori exclusively."

(Groube, 1965 : 44)

More recently Davidson has shown that

"On the present evidence, the stone hearth was not an essential feature of houses in the Auckland area."

(Davidson, 1970a : 56)

thereby drawing attention to the second issue. Excavations in North Auckland, Auckland Isthmus and Waikato areas have shown that the stone-edged hearth is completely absent from a number of sites in which houses have been revealed by excavation. These include sites on Motutapu Island (Davidson, 1970a), Hamlin's Hill (Davidson, 1970b), Ruarangi pa near Whangarei (Hougaard, 1971), and the swamp pa of Ngaroto (Shawcross, 1968) and Mangakaware (Bellwood, 1971) in the Waikato.

The firepits found at Lake Ngaroto, site of a Classic Maori settlement, were described as

"...circular bowl-shaped depressions about 30 cm in diameter and 15 cm deep....They are found filled with ashy humus, burnt shell, and quite often burnt stones. Some have slightly raised rims and others have previously been noted as being surrounded by stake holes. A few at least must have been within houses and presumably served for heating."

(Shawcross, 1968 : 18)

The presence of stones in the pits was seen by Shawcross as suggestive of cooking. He noted that this activity would hardly accord with the ethnographic records.

Bellwood encountered very similar evidence at a nearby late pa, Mangakaware 2. Circular pits containing stones were found both inside and outside the houses. In assigning the name *haangi* to these features, Bellwood noted that they were normally used for cooking. Ethnographic records, however, argue strongly against cooking or eating within the sleeping house. While the outside *haangi* are associated with thick ash deposits and abundant shellfish remains, those inside are accompanied by a thin scatter of shells suggesting that shellfish at least were occasionally consumed indoors. Bellwood does not conclude that the indoor pits were for cooking, however, and suggests that hot stones in a pit would have provided a smokeless means of heating (Bellwood, 1971 : 86-7 & fig. 7).

The recently excavated pa at Ruarangi, Whangarei contained evidence of two types of house floor, both apparently belonging to the Classic Maori phase. The earlier featured clay floors with simple hearths, "...fires being lit on the clay floor or in scoop depressions.." (Hougaard, 1971 : 20). The later floor was of small slabs of limestone. The associated hearths were "...oval and outlined with limestone slabs and blocks." (*idem*)

The significance of these discoveries lies in the demonstration that in the Classic Maori phase of North Auckland, Auckland and Waikato, the rectangular stone-edged hearth may prove to be extremely uncommon. More important still, these finds have drawn attention to the firepit and scoop features (with or without heated stones) and their presence *within* houses. The similarity between these features and the *haangi* pit or simple scoop used for cooking, must be taken as a warning against assigning function too readily. At this stage it might be advisable

to avoid ethnographic terms such as *haangi* or *umu*, as Sutton has already recommended (Sutton, 1971 : 69ff). It may also be unwise to regard the ethnographic sources as being fully applicable to all districts (Leach, 1969 ; Mair, 1972).

The house floors at Ruarangi have drawn attention to the fact that domestic hearths may be simple scoops, and furthermore that stone-edged hearths need not be rectangular. The stone-edged circular or oval hearth is seldom mentioned in discussions of house types. In many cases its presence may not have alerted the excavator to the possibility that he was working on a house floor, and so the feature has not been treated as part of a house. It is likely that many were assigned to the general category *haangi* and accorded the superficial and inadequate treatment that *haangi* frequently get (Sutton, 1971).

Apart from Ruarangi, the circular stone-edged hearth has been recorded in the North Island at the Archaic site of Kaupokonui in South Taranaki (Buist, 1962 : 236). It was found in a three foot deep rectangular pit 15 x 5½ feet, interpreted as a house. It is illustrated by Robinson (1963) as having an edging of small stones lying around two thirds of the circumference, the remaining space being occupied by two large stones with a gap between them. Similarly the stone edges of the Ruarangi hearths were incomplete.

In the South Island, one is recorded from the Archaic site at the mouth of the Heaphy River. This was a complete circle of stones, about 30 inches in diameter. Wilkes and Scarlett (1967 : 194) commented that it

"...was first thought to be a hearth, but in view of there being no excess of charcoal present and no other sign of burning on the stones, this idea was abandoned."

Nevertheless, it was close to one of the pavements, and to an unexplained arrangement of post-holes. The stones were considered larger than the usual oven stones. In the light of the similar pattern of features at Ruarangi, interpreting the Heaphy circle as a hearth may be more reasonable.

In view of the amount of excavation undertaken by Teviotdale, it is not surprising that he encountered a number of circular, stone-edged hearths in Otago. These he believed to be house features, a variation of the rectangular stone edged hearth. At Shag River he observed

"...a Maori fireplace made of a circle of basaltic boulders instead of a square of sandstone slabs as is usually the case."

(Teviotdale, 1924 : 5)

In his report on the Waitaki Mouth excavations he described a site known as Waitangi, fifty miles upstream, where numerous flakes of slate and quartzite occur around groups of large waterworn boulders which "...originally formed the edges of circular fireplaces.." (Teviotdale, 1939 : 180). In the same report he refers to other sites where circular stone-edged hearths occur:

"...at Shag River, at Little Papanui, and at Hyde [Central Otago] I have found round fireplaces - that is, with kerbstones placed in a circle instead of the usual oblong arrangement."

(*ibid* : 173)

The examples from Little Papanui are described as follows:

"Nearer the fence I found a hole about eight inches in diameter and eighteen inches deep and filled with ashes and a short distance away was a small circular depression ringed with stones and filled with ashes."

(Simmons, 1967 : 6)

"On 10 March 1931 Teviotdale found in the upper layer, near its eastern end, a circular fireplace formed of seven stones touching each other. It was eighteen inches in diameter and filled with ashes. Two small boulders each a foot from the outer rim of the fireplace lay on either side.."

(*ibid* :13)

"On 23 May 1934, at the eastern end near where the top layer dipped down to the sea, another circular fireplace was found. It was twenty-one inches in diameter:

'formed of seven stones each about 9" long by 6" wide all touching each other in the ring..'

(*idem*)

There are too few examples of circular stone-edged hearths to expect or even look for patterns of distribution

in time and space. There are sufficient, however, to suggest that this form may prove to be a recurrent style in hearth formation. If domestic hearths are to be classified primarily by shape, that is rectangular or circular, then the category circular containing both stone-edged and simple scoops may even be expected to predominate numerically. From this point of view the rectangular stone-edged hearth becomes the more specialised form. Sufficient examples are known to reach some conclusions concerning their distribution. These examples have been tabulated under site or area name, with approximate phase status, dimensions (if known), number of stones (Table 1) and details of association relevant to the interpretation (Table 2). The table is by no means complete, but it is to be hoped that this study will stimulate greater awareness of hearth and firepit features in future, and promote greater precision in their recording.

Before any conclusions are suggested, a number of qualifications must be outlined. At present, all spatial distribution studies within New Zealand necessarily reflect uneven archaeological research. The sites on which the rectangular and circular forms occur together are not only inadequately dated but are known to cover the cultural span from Archaic to Classic Maori. This means that the archaeologist has no certainty of the contemporaneity or otherwise of the two stone-edged forms. In many cases it is not clear whether measurements are of internal or external dimensions. Also, references to four-stone fireplaces need not imply that only four stones were in use, but that the hearth conformed to the four-stone pattern in shape and size.

Nevertheless, certain patterns can be seen in the data. Late sites of North Auckland, Taranaki, and Western Wellington tend to have small (e.g. 12" x 12") square four-stone hearths. A hearth of 24" x 16" at Ohaeawai can be regarded as unusually large. A second group is characterised by much greater dimensions (e.g. 33" x 20"), a tendency to an oblong shape, and the use of more than four stones. Of course as hearth size increases it becomes more and more difficult to find single slabs of the necessary length, hence the frequent use of seven or more stones in the kerbing. This group has been identified from Archaic sites (12th - 16th century) on the Palliser Bay coastline, D'Urville Island and the Northeast coast of the South Island. A number of hearths in the Palliser area appear to have an additional stone offset from one corner, a feature which may well prove to have some regional significance. A closely similar and probably related group of hearths occurs in Otago, some of which are certainly Classic Maori, and known to have

been influenced from the North, but others may well belong to occupations of Archaic status.

On a gross level it is tempting to provide some kind of interpretation for these patterns. Perhaps the large multi-stone, oblong form, preferred by Archaic peoples of the East Coast of the North Island and northern South Island, spread southward with the various groups believed to have migrated into the South Island. This form may have developed from the small four-stone hearth, but the latter is, at present, only poorly represented in Archaic sites of the North Island. The small square Taranaki form may be a late fashion spread south from Northland down the west coast of the North Island, and perhaps associated with musket warfare. On present evidence, the standard Classic form in the late prehistoric period in the Waikato, parts of Auckland and probably the Western Bay of Plenty was the simple stoneless scoop firepit. Of course, these interpretations are tentative, but it does suggest that, in the future, hearth form may be a valuable marker of a regional tradition.

TABLE 1

RECTANGULAR STONE-EDGED HEARTHES

N.B. Arranged in order from north to south. The accession number refers to Table 2 where references and interpretations are to be found.

	Site	Age	No. and Form	Dimensions	No. of Stones
1	Waikuku Beach, North Cape (N1 2/100)	? Classic	1 rectangular	-	4
2	Ohaeawai area, inland from Bay of Islands	Classic ? Nga Puhī pa	many rectangular	12" x 18" (usual) very large: 24" x 16" range: 8" x 10" to 16" x 18"	4
3	Mt. Roskill, Auckland	?	1 square	-	-
4	Taylor's Hill Auckland	?	1 rectangular	-	-
5	One Tree Hill, Auckland	?	1 rectangular	-	4
6	Kumara Kaiamo North Taranaki	Phases V and VI 18 - 19th century	2 rectangular	-	? >4
7	Waimate Pa, Taranaki	19th century	1 square	12" x 12"	4
8	Punehu Pa, Taranaki	? 18th century	several square	12" x 12"	4
9	Tarata Pa, Waitotara	Classic	3 rectangular	-	-

TABLE 1 (contd.)

	Site	Age	No. and Form	Dimensions	No. of Stones
10	Paraparaumu, (near beach)	? 19th century	1 square	Each stone approx. 9" x 5"	4
11	Moikau, Palliser Bay	? Late Archaic 15th century	5 oblong	(external) (i) 40" x 30" (ii) 36" x 28" (iii) 24" x 24" (iv) 40" x 30" (v) 28" x 24"	9 7 7 ? 9
12	Makotukutuku, Palliser Bay	(i) 1150-1300 Archaic (ii) 1450-1600	1 oblong	(i) 12" x >12"	3(?)
			1 oblong	(ii) 26" x 17"	10
13	Pararaki, Palliser Bay	? Archaic	2 oblong (1 damaged)	32" x 24"	7
14	Ragged Point Beach, D'Ur- ville Island	? Archaic	1 oblong	(internal) 33" x 20"	4
15	Wairau Bar	Archaic	? several rectangular	-	-
16	Clarence River, Kaikoura S42/2	? 16 - 17th century	1? rectangular	-	-
17	Pa Bay, Banks Peninsula	? 18th century	several rectangular	-	3, 4, >4
18	Katiki Point, North Otago	18th century	2 oblong	(internal) (i) 24" x 14" (ii) 19" x 12"	>13 8
19	Shag River, North Otago	? (Archaic to Classic)	many (>30) rectangular	-	-

TABLE 1 (contd.)

	Site	Age	No. and Form	Dimensions	No. of Stones
20	Mapoutahi, Otago Heads	Classic	1 oblong	-	3
21	Murdering Beach, Otago Heads	Classic	many rectangular (including oblong)	-	4, 6
22	Tarewai Point, Otago Peninsula	19th century	3 rectangular	one 20" x 16"	-
23	Little Papanui, Otago Peninsula	Archaic to Classic	approx. 13 rectangular	one 30" x 14" another 24" x 18"	4

TABLE 2

Interpretations and References

-
- 1 Interpreted as a '*taku ahi*' - or fireplace.
"...four flat stones set on edge"; R. Taylor, 1968:44
-
- 2 Fireplaces (*takuahi*) of 'dwelling huts';
Best, 1927 : 183, 224, 227
-
- 3 Fireplace (of house); Groube, 1965 : 26
-
- 4 "Fireplace of the standard stone lined form" - damaged;
Groube, 1965 : 24
-
- 5 "*Taku-ahi* (fire hearth)"; Fairfield, 1941:95 & fig. 3
-
- 6 "Flat stones set on edge" - within house structures
marked by post holes. Parker and Buist, 1961 : 13-14
-
- 7 "Flattened beach stones set on edge" within a clearly
defined house; Buist, 1962 : 187; Groube, 1965 : 31,
66. Robinson (1963 : 134) quotes Marshall's descrip-
tion of hearths at this pa being "walled in and
bottomed with smooth oval stones."
-
- 8 Belonging to "former sleeping-huts" the floors of
which were excavated to a depth of about 1 foot;
Phillipps, 1952 : 29 and fig. 2
-
- 9 Within house structures clearly defined by post-holes;
Smart, 1962
-
- 10 Fireplace in a house marked by post butts and charred
floor matting; Beckett, 1957 : 357 and fig. 2
-
- 11 (i) was in the centre of a substantial house marked
& (ii) were a few feet apart, a short distance from
(iii) the excavated house;
(iv) was in the same group of presumed 'houses' and
(v) was about one mile away in the same valley.
N. Prickett, 1972 : pers. comm.
-

TABLE 2 (contd.)

-
- (i) was in the lowest level of a coastal occupation site, associated with evidence of many activities but not lying *within* any feature that could be interpreted as a house; and
- 12 (ii) was in a large, well defined house structure excavated on a terraced ridge, two miles from the sea, and associated with a raised rim pit.
B. F. Leach : pers. comm.
-

- 13 These were uncovered by bulldozers engaged in bridge approach construction. Other material from this locality is largely Archaic, and there are three 12th century C¹⁴ dates for features in the near vicinity; a monograph giving full details of the Palliser Bay excavations is in preparation.
-

- 14 "*Takuahi*" - large, elongated water-worn boulders, set up on edge; Keyes, 1960 : 259
-

- 15 "Hut fireplaces" used to identify hut-sites;
Duff, 1956 : 25-27
-

- 16 "Stone fireplace" associated with remains of squared timbers, indicative of "house sites," and close to raised rim pits; Trotter, 1966 : 124
-

- 17 Lying within houses of various sizes;
M. Thacker : pers. comm.
-

- 18 "Fireplaces, made of flat water-worn stones embedded on edge" within a clearly outlined house;
Trotter, 1967 : 239
-

- 19 Marking "hut-sites"; Teviotdale, 1924 : 3-10
-

- 20 Fireplace not adequately recorded - fourth stone may have been removed by curio-hunters; brief report filed in N.Z.A.A. site record.
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- 21 'Hut fireplaces' commonly associated with post butts;
Lockerbie, 1959 : Pl. VIb; Simmons, 1964 : 56
-

TABLE 2 (contd.)

22	'Hut fireplaces'; Teviotdale, 1939 : 110 c.f. Simmons 1966 : 37
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23	'Hut fireplaces'; six of which were spaced each ten feet from the next; Simmons, 1967 : 9-10, 12
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